Citation for published version:

Hulya Dagdeviren, and Simon A. Robertson, 'A critical assessment of transaction cost theory and governance of public services with special reference to water and sanitation', *Cambridge Journal of Economics*, Vol. 40 (6): 1707-1724, January 2016.

DOI:

https://doi.org/10.1093/cje/bev079

A revised version of this article is forthcoming in *Cambridge Journal of Economics* in 2016

A CRITICAL ASSESSMENT OF TRANSACTION COST THEORY AND GOVERNANCE OF PUBLIC SERVICES WITH SPECIAL REFERENCE TO WATER AND SANITATION

Hulya Dagdeviren
Simon A. Robertson
University of Hertfordshire
April 2015

Abstract. This paper aims to provide a critical assessment of Oliver Williamson's work on the choice between public and private governance by focusing on his central proposition that public governance should be considered as an organisation of last resort when all else fails. Our primary argument is that Williamson's work on public governance reflects an underdeveloped framework, mostly focusing on sovereign administration and is not suitable for application to a host of other public services. It has the potential to corroborate any governance form which limits the usefulness of transaction cost theory (TCT) as an instrument of analysis and prediction. Although Williamson characterizes TCT as an empirical success story our application of it to the public-private dilemma for water and sanitation sector finds very little historical and contemporary validity in this view.

Keywords: Governance, transaction costs, Williamson, public services, privatisation, water and sanitation

1. Introduction

Considerable developments have taken place in transaction cost theory since Coase's 1937 article. An important part of the contribution to this process has come from Oliver Williamson who together with other scholars embedded the transaction cost theory within a broader perspective of what is now known as new institutional economics. These advancements are considered to have brought economic theory closer to reality. The significance attributed to Williamson's contribution to transaction cost theory (TCT) may be observed in the awarding of the Nobel Prize to him in 2009.

One of Williamson's propositions is that the governance structure of transactions can be understood and explained through a focus on their attributes and costs. This is demonstrated by a comparative analysis of transactions conducted through markets and firms, and subsequently extended to the arenas customarily considered within the remit of governments and the public sector. This latter progression is the primary focus of this paper: Williamson (1999) proposes that TCT is capable of the analysis and understanding of governance structures of public sector transactions.

However, a predisposition towards the prominence of markets and private governance exists in his work. His assertion that 'in the beginning there were markets' which he justified for expositional convenience (Williamson 1975) clearly goes against the historical reality (Ankarloo and Palermo 2004, Palermo 2007) and ignores the role of the state in the development of markets as well as economies (Chang 2002). His suggestion to choose public governance 'when all else fails' (Williamson 1999, 2000) reflects a similar preconception.

In this paper, we challenge the proposed universal validity of TCT with reference to various aspects of public sector transactions. Our discussion starts with a critical analysis of Williamson's views on public versus private governance and continues with the examination of the empirical validity of his propositions in the context of private participation in water and sanitation sector.

Several arguments are advanced here. The fundamental point we make is that Williamson's recommendation that public governance should be considered as a last resort and limited to transactions, for example, where breach of loyalty is punishable for treason as in foreign affairs is based on an underdeveloped theoretical framework. This view is justified on the basis of several arguments. Firstly, there is considerable ambiguity in the rhetoric of TCT and this creates a potential for ex-post justification of any governance structure and hence limits the explanatory capacity of the theory.

Secondly, Williamson presents a dual approach to governance: one is for the choice between markets and hierarchical organisation and the other is for the choice between public and private governance within hierarchical organisations. His approach to markets vs firms has already been discussed extensively and criticised by many (Chang 2002, Hodgson 2004, Ankarloo and Palermo 2004, McMaster and White 2006, Palermo 2007). No such analysis exists on his work for the choice between public and private organisation. In this article, we argue that the criteria developed by Williamson for that choice (i.e. probity, low powered incentives, protective employment relations) do not provide a consistent guidance. In fact, it is impossible to explain the historical and contemporary ownership patterns in public services on the basis of his framework of analysis.

Furthermore, it is not always clear where TCT stands in the broader literature on public and private governance. What differentiates the public from the private sector in the provision of services such as health, education, water and sanitation and electricity? As discussed in the next section, it is curious that in his *specific writings* on public vs private governance, Williamson does not engage with some of the most established ideas on ownership and control, including the relevance of market structure, externalities and asymmetric information. This raises the question as to whether these views are seen as irrelevant to the choice between public and private provision of some of the essential services. More generally, many studies, including those in the TCT tradition, examined the effects of different forms of ownership on *efficiency* within a microeconomic (firm level) perspective. A considerable body of empirical work shows that in general there is no significant difference between the efficiency of public and private firms (see, for example, Villalonga 2000, Saygili and Taymaz 2001, Boubakri and Cosset 1999 and Millward 1988). Moreover, for public services such as health, education, water and sanitation, social and developmental consequences of ownership (e.g. wider access, affordability and equity) are important and cannot be treated as secondary to efficiency objectives. The private sector usually has no inherent motivation to achieve these social goals unless they are incentivised by administrative (political) measures.

In the next section, we provide a critical assessment of the theoretical underpinnings of Williamson's application of TCT to the public-private dilemma. This is followed, in Sections 3 and 4, by an empirical examination of TCT on the basis of the case of water and sanitation services. In these sections, we argue that a strict application of Williamson's guidance on the choice between public and private governance would suggest superior performance under private ownership in most public service while in reality transaction costs may be lower under public provision and incentive structures may not always be conducive to efficiency gains under private governance. In the case of water and sanitation services, cross country experience does not support the view that utility performance is better under private governance. Finally, we emphasize the political economy of service provision – including access to and affordability of supply; externalities associated with provision; administrative capacity of the host government, and the power relations that are active in the selection and implementation of the particular mode of governance. Hence, we propose that political interest in the provision of public services is a crucial missing element in Williamson's propositions on public-private governance.

2. TCT, governance and the theoretical underpinnings of private-public spectrum

Neo-classical thinking on the choice between public and private ownership of economic activities has changed considerably over time. In the earlier academic debates, public ownership was seen as the 'norm' in the presence of market failures arising from externalities and natural monopoly characteristics with consequent price distortions, inefficient resource allocation and welfare losses. This view gradually lost ground with the advent of property rights (Demsetz 1967; Alchian and Demsetz 1972; 1973; Furubotn and Pejovich 1972) and public choice theories (Niskanen 1968, 1975; Buchanan 1978, 1983; Tullock 1959, 1961; Mueller 1976). Increasingly, independent regulation and competitive bidding have been promoted as means of tackling market failures (Goldberg 1974; Posner 1974; Peltzman 1989; Shirley 2002).

The understanding of economic organization beyond the market is furthered within the work of TCT where transaction costs encompass the nature of internal organization and economising benefits relative to the market (Williamson 1971). TCT is not an alternative but supplement to the neoclassical economics in that the former is said to focus on the higher levels of analysis (embeddedness, institutional environment and governance) while the latter deals with resource allocation and employment (Williamson 2000: 597). A number of features distinguish TCT from the neo-classical model. First, the incorporation of behavioural assumptions provides a basis for the utilization of non-market modes of organization. Through the inclusion of bounded rationality and tendency for opportunism, TCT describes the likely actions of individuals operating within imperfect conditions. Second, variation in transaction costs creates a potential for 'organizational economies' as opposed to scale or scope economies (Williamson 1979, 1998a, 2002a). These conditions and costs determine the appropriateness of market, firm or intermediary ('hybrid') modes of governance. The choice amongst governance structures with 'different costs and competence' is argued to mitigate the hazards associated with opportunism, bounded rationality, incomplete contracts, weak property rights and institutions.

In the development of TCT, Williamson describes initially the contrast in governance structures between markets and firms. It is argued that hierarchical organization (e.g. firm) may reduce transaction costs, depending on its impact on incentives, monitoring and structure of production. Whereas exchange through the market may have high transaction costs for some activities, exchange within integrated structures (hierarchical modes) may suffer from low-powered incentives (Williamson 1995, 1998a). Two hard and fast rules are described in relation to the choice of governance. One is that the choice of governance is about optimization in relation to transaction costs. In other words, different governance forms are adopted to economize on the latter. The other is that the choice of governance depends on the attributes of transactions, in particular their frequency and idiosyncrasy[1] as well as the uncertainty within which they are carried out.

> 'Three of the key dimensions of transactions that have important ramifications for governance are asset specificity [or idiosyncracy]..., the disturbances [or uncertainty] to which transactions are subject (and to which potential maladaptations accrue), and the frequency with which transactions recur... Given that transactions differ in their attributes and that governance structures differ in their costs and competencies, the ... discriminating alignment hypothesis applies.' (Williamson 2002a, p. 7)

Exchange through market or a low level of integration is recommended when transactions have high frequency, limited idiosyncrasy and uncertainty. The conjecture that market governance is best when transaction costs are low, whereas integration within a firm is necessary when they are high, is derived from the Coasian (1937) critique of neoclassical theory. Development of this framework, following its initial establishment, remains limited: the basic concepts described in Williamson's early papers (e.g. 1971; 1979; 1981) reproduced in the subsequent papers (e.g. 2005). Nonetheless, TCT is proposed to be a universal approach for understanding governance structures and an empirical success story with high predictive capacity (Williamson 2009).

The most relevant aspect of TCT for this paper is its subsequent proposition that the decision about ownership is a decision about governance structure. Departing from this premise, Williamson applied TCT to explain the dichotomy of public vs private ownership and their comparative efficiency. Our view is that the suitability of TCT for the analysis of the comparative potency of public vs. private governance, especially for public services, remains problematic. Take the ideas expressed in the next three quotations from three different articles. These were reiterated in other publications by Williamson (2003b, 2002a, 1979) and hence, they represent major elements of his theory.

> 'The public bureau, in this scheme of things, can be thought of as the organization form of last resort: try spot markets, try incomplete long-term contracts, try [private] firms, try regulation, and reserve recourse to public bureaus for when all else fails (comparatively).' (Williamson 2000, p. 603)

> 'What distinguishes "probity transactions" are their needs for loyalty (to the leadership and to the mission) and process integrity. Because breach of contract/lapse of probity can place the system at risk, probity represents a condition of contractual hazard the mitigation of which cannot be realized through pecuniary penalty...In the limit, such breach is punishable as treason.' (Williamson 1999, p. 324)

> 'Specifically, the many disabilities of the public bureau notwithstanding—very low-powered incentives, very costly administrative procedures, very protective employment relations—there are some transactions (of which foreign affairs is an example) for which the public bureau comes off best judged, as it should be, comparatively.' (Williamson 2005, p. 387)

Some observations are due on these ideas:

Firstly, in Williamson's approach, the underlying principle with which the optimising form of governance can be selected has a dual nature. One is for the choice of governance between firms in general (including public and private) and markets. The other is for the choice between private and public governance of firms. For this second type of selection, Williamson introduces a new set of criteria such as incentives, process integrity, probity and need for protective employment relations. Although he discussed the difficulties associated with franchising natural monopolies earlier (1976, 1985) highlighting the problems associated with incomplete contracting, problems of implementation, etc., in the publications devoted to the choice between public and private organisation (1997, 1999) these issues are not incorporated into the overall framework. His discussion in these is largely based on sovereign transactions such as "foreign affairs, the military, foreign intelligence, managing the money supply, and, possibly the judiciary" with no substantial reference to other public services. He derives his conclusions on public vs. private governance by delineating the characteristics of these areas where private sector cannot possibly be engaged. That is why Williamson places an emphasis on the role of 'probity', which he believes to be present in any transaction, but its significance "becomes evident only in conjunction with extreme instances (of which sovereign transactions/foreign affairs is one)" (ibid.). Hence, transaction costs associated with a breach of this probity are non-contractible and recourse may only be undertaken through mechanisms particular to the state, and as such these transactions remain hierarchical within the public bureaucracy. The underlying purpose of the term probity is to incorporate the consequences of potential 'opportunistic' behaviour into framework for the choice between public and private governance. In contrast to what is argued by Williamson (1985, 1993), opportunism is not necessary for existence of firms as demonstrated by Hodgson (2004). Neither, is probity necessary for the existence of public ownership as will be argued below.

Nevertheless, the scholars of TCT have not taken this duality into account so far. For example, one of the applications of Williamson's approach was undertaken by Menard and Saussier (2002), who aimed to explain the causes of different forms of governance (sole public or private concession or lease contracts) in French water and sanitation utilities. In this work, the authors used the general framework for the choice between market and firms (where investment specificity and uncertainty matters) rather than the framework Williamson developed for the choice between public and private governance (where probity, process integrity or the need for protective employment relations matter).

The implication of all this is that Williamson's general framework is not general enough to explain governance forms in certain sectors while his specific framework for the public sector is less than adequate. For instance, TCT can neither explain the history nor the contemporary public ownership patterns in a wide range of economic activities with reference to the concept of probity or the need for protective employment contracts. In services such as health, education, water and sanitation, where there is no distinct role for probity or loyalty in the sense described above, the public sector has played a dominant role for decades.

Secondly, the TCT approach contains considerable theoretical ambiguity and potential for ex-post justification of any governance form. The arguments are sufficiently vague to approve and disapprove any public ownership as convenient because what appear as weakness in some transactions (low incentives, greater job security and bureaucratic structure) is considered as strength for other transactions:

> '....These features have been deliberately crafted into the public bureau, thereby to make it better suited to govern some (especially difficult) transactions. Vigilance is nonetheless needed-lest the public bureau be 'overused'.' (Williamson 2000, p. 603)

Such conceptual haziness could certainly turn TCT into 'an empirical success story' as often proclaimed by Williamson (1998a, 2002a, 2002b, 2003) since ex-post justification of private or public management should not be very difficult. It is notable that Williamson's specific conclusions in favour of private as opposed to public governance of economic organizations require an idealized institutional environment (e.g. where there is no weakness in the capacity to design and enforce contracts). While it is recognized that capacity of implementation would affect outcomes (Williamson 2000) these issues appear on the fringe rather than at the core of his writings on public versus private governance. For example, in his critique of property rights theory, Williamson warns against the problems of privatization of natural monopolies in the presence of ex-post contractual hazards and implementation problems.

> 'Because franchise bidding works much better for some natural monopoly industries than others, the use of franchise bidding will be reserved for those industries where comparative net benefits can be projected – but not otherwise. Privatization, it turns out, is not an all-purpose solution.' (Williamson 2000, pp. 609-610)

He then asserts in another article that:

> 'Franchise bidding is not totally lacking in merit, therefore; on the contrary, it is a very imaginative proposal. TCT maintains, however, that all contracting schemes – of which franchise bidding for natural monopoly is one – need to be examined micro-analytically and assessed in a comparative institutional manner.' (Williamson 2005, p. 384)

The issue with these views is not that they are inconsistent, in fact, quite the contrary. However, they reflect the ease with which both argument and counter argument could be provided for the same matter. Indeed, there seems to be a misalignment between this loose framework of analysis and the rigid conclusion that public management should be adopted only when all else fails. The predictive claims of TCT in other areas are also challenged by David and Han (2004), Carter and Hodgson (2006) and McMaster and White (2013).

More importantly, in his *specific* publications on the relative merits of public and private governance (i.e. 1997, 1999), there is limited engagement with some of the most established ideas in the subject area. For example, the importance of market structure and externalities for the choice between public and private ownership has been a prominent topic of interest. In this view, goods and services that tend to be produced in monopolistic markets (e.g. water and electricity) or that generate externalities (e.g. positive or negative spill-overs in health and education) or that have 'merit good' or 'public good' characteristics are best left to the public sector. These views are part of 'the state of the art' and signify a legitimate concern to distinguish the areas where the public sector can or cannot be more effectively involved than the private sector. Although Williamson discussed the issue of externality in in other contexts in two articles before (1967 and 1970) he did not consider its relevance in his work devoted to the choice between private and public governance (1997, 1999).

In a recent study, a scholar of TCT examined why water services have remained predominantly under public control in the US since the late 19th century. He argues that externalities cannot justify public ownership since 'the logical link between externalities and ownership was, of course, severed by Coase (1960)' (Masten 2011: 11). Coase's proposition of 'side payments' to compensate those affected by externality works in his example of the cattle herder and the farmer. But then, one wonders what sort of compensation would be appropriate for people who lose their connection to safe drinking water and lose their lives from water-born diseases because it becomes unaffordable after privatisation. Masten also argues that Demsetz (1968) disproved the justification for public ownership in industries with the characteristics of natural monopoly. Demsetz in the mentioned paper argues that scale economies do not need to result in monopoly pricing even in natural monopolies if for example competitive bidding and contracting is used. It is intriguing that Masten credited Demsetz for *disproving the need for public ownership* by introducing the possibility of contracting out given that same study by Masten is fundamentally about how contracting in the water and sanitation monopolies did not work in the USA due to contractual frictions between the municipal authorities and private sector.

Furthermore, the prevalence of asymmetric information in some services such as health care is considered to be a major argument for public control (Tuohy and Glied, 2011). Although Williamson gives great consideration to information asymmetries for the choice between the market and the firm he does not consider its relevance for the choice between public and private governance. What is the position of TCT on this? It is also not clear what the TCT view is on the *developmental role of publicly provided services* in that they can prevent potentially regressive distributional consequences of private ownership, ensure a more egalitarian access to essential services such as health, education, water and sanitation and thus improve individual and social welfare in current and future periods. Likewise, there is a huge literature on what is called 'public service ethos' in the public administration tradition –i.e. values of equity, integrity, impartiality, accountability, to pursue public interest, serve the community and to make a positive difference (Rayner et al. 2010, Needham 2006, Pratchet and Wingfield 1994, Lewis 2006). The position of TCT on these values and their compatibility with 'the profit motive' of private ventures is not clear either.

Overall, TCT provides very little coherent guidance as to which sectors, activities or services should be considered appropriate for public management. The example of 'foreign affairs' as a suitable area for public management taken together with the suggestion that 'when all else fails' leaves very little room for the state as in market fundamentalist views.

3. Empirical validity of the TCT approach on 'public governance': the case of water and sanitation

In this section, we assess the validity of Williamson's TCT approach on public governance in the context of the privatization of water and sanitation services. The water and sanitation sector is particularly useful to demonstrate the weaknesses of this approach. The industry can broadly be categorised as a natural monopoly despite the possibility of competition in a number of sub activities such as billing and metering (Kirkpatrick et al. 2006). Attempts to introduce competition in the sector failed (Xun and Malaluan 2008, Haggarty et al. 2002). A small labour force is required to operate the utilities and capital investment accounts for a high proportion of costs, varying from over 60 to 80 per cent (Shirley and Menard 2002, Noll 2002). Hence, the marginal cost of production is very low. Investment in the sector is subsidised by governments in many economies, including the developed countries (Komives 2005). In addition to these features, utility performance in the sector is sensitive to water scarcity or abundance, topography of the location, size of the network and income levels of the users. Issues of affordability of water and sanitation services render purely market based pricing politically impossible even in the developed countries like the UK where prepayment meters, which implied self-disconnection when households could not afford to pay, have been outlawed (Bauer 1997, Dore et al 2004, Spar and Bebenek 2009). The problem is even more serious in developing countries (Alcazar et al 2002, Dagdeviren 2008, 2011). The lack of provision or low quality supply can generate externalities especially in urban areas where safe substitutes do not exist (WHO 2014, Kremer et al. 2011, Galiani et al. 2009).

If Williamson's general criteria are applied to the water and sanitation services, it would be notable that the service delivery involves high frequency which makes it suitable for market governance but large scale transaction specific [sunk] investments and the associated uncertainty calls for integrated production. Hence, the need for organisation of production and exchange within firms rather than through market is established. However, this framework does not provide any guidance on the appropriate form of ownership for the sector. Neither could the attributes of transactions be invoked in favour of private as opposed to public provision without demonstrating, firstly, that there is a tendency for higher uncertainty under the latter, or secondly that public management is categorically unsuitable for transactions of high level of frequency and idiosyncrasy.

Let us consider the more specific conceptual framework Williamson offered on the choice between public and private governance and variables associated with it; i.e. the need for probity and protective employment contracts. Since there is no distinct role for 'probity' or highly protective employment contracts in the water and sanitation sector, the application of TCT would lead to the conclusion that these services would and should be governed by the private sector.

In what follows, this proposition is assessed on the basis of three critical questions. The first is whether historical and contemporary governance patterns in public services validate TCT. Our argument is that the framework presented by Williamson does not explain the historical ownership patterns in certain sectors where prior to a recent orientation towards regulated private provision (and this in a limited number of countries) services have been and still dominantly are under the remit of state or municipal water companies. For example, the history of water service provision in countries where network provision is well developed shows the significance of the public sector in operation, administration and financing. Early development of water services has typically been undertaken by small scale private sector operators, particularly in the UK, the US and many European countries (Juuti and Katko 2005; Hall and Lobina 2008). In the process of greater industrial development, sanitation and hygiene problems emerged in the growing urban centres where water and sanitation were provided by patchwork private operators. Further momentum for comprehensive utility networks was found in the increased need for water in industry, the need for improved fire-fighting capacity, and in some cases corruption and the abuse of monopoly position by private operators (Millward 2011, Cutler and Miller 2005, Juuti and Katko 2005).

This is typical across countries at various stages of development. Currently, the vast majority of water operators across the developed and developing world remain under public ownership: for example, globally an average of over 90 per cent of piped water in urban areas is delivered by publicly-owned bodies, at both national and municipal levels (Hall and Lobina 2008). Even in those countries, where the private sector has a significant role in service provision, establishment of network utilities and the significant investment required for this has been undertaken or financed by the state, typically by subsidy and cross-subsidy (Hall 2003; Juuti and Katko 2005; Cutler and Miller 2005).

Our second argument is that since –according to TCT– private governance seems more appropriate for water and sanitation services for the reasons outlined above, the outcomes of privatization in the sector in the last three decades should have generated superior performance results. This, however, is not confirmed by the relevant literature on the privatization of water services. Instead, the existing research presents us with an ominous picture. In the UK, no efficiency gains were recorded because of low labour content and slow technical change in the sector (Shaoul 1997). In France, re-municipalisation seems to be underway with Paris leading the process (Le Strat 2011). Similar trends are observed in Hungary (Hall 2011). In the developing countries, performance of public and private operators did not exhibit statistically significant differences (Estache et al. 2005; Parker and Saal 2004, Bakker et al. 2008). Competition has not worked (Xun and Malaluan 2008, Haggarty et al. 2002, Kirkpatrick and Parker 2006). Serious weaknesses have been identified in the regulatory objectives, processes, capacity and institutional environment in developing countries (Parker and Kirkpatrick 2004; Minogue and Cariño 2006). Some studies found high levels of efficiency prevailing in some publicly owned utilities such as EMOS in Santiago, Chile (Shirley et al. 2002). While Galiani et al. (2005) presented case studies that showed improved efficiency and increased investment under private water supply systems in Argentina, other studies on prolonged contractual disputes and renegotiations that eventually led to renationalization challenge this view (Dagdeviren 2011; Casarin et al. 2007; Botton and Merlinsky 2006).

Finally, another way of assessing Williamson's TCT approach could be through the examination of evidence to establish whether transaction costs are systematically higher under public than private governance. A realistic approach may be that some transaction costs (TCs) are higher under private governance whilst others may be higher under public governance depending on the context (e.g. technological characteristics of production, level of development, institutional structure, other social, economic and political factors). In some cases, low transaction costs may be traded off by higher production costs. For example, public governance of natural monopolies may reduce TCs by eliminating the cost of outsourcing (e.g. cost of tender, drawing up contracts, selection, regulation and enforcement). Similarly, TC of investment finance can be lower for the public sector. Moreover, in services such education, health, water and electricity TCs may be higher under private management due to wider fragmentation of market and activities.

In the water and sanitation services although the literature does not provide any concrete measure of the extent of transaction costs under private and public ownership, anecdotal evidence suggests that they might be higher under private models. These include the arranging of agreements, the organising of the bidding process and various other legal, consulting and public relations costs (Kirkpatrick et al. 2005). According to a World Bank study these costs can amount to five to ten per cent of the total value of projects (cited in Lobina and Hall 2003). Similar evidence can be found for OECD countries in Perard (2009) and for Spain in Bell and Fageda (2008).

Further intuition on the scale of transaction costs under private provision could be gained by the evidence on the frequency of contractual disputes, renegotiations and cancellations. For example, McMaster and Sawkins (1993) discussed the problems associated with franchising water and sanitation in Scotland on the basis of opportunistic behaviour, incomplete contracting, information asymmetries and uncertainty. In another study of water and sanitation utilities in the US, Masten (2011) argued that contractual frictions are a major factor in explaining the predominance of public ownership and control in the sector. In the developing countries, such frictions are caused by public opposition to privatization of essential public services, poorly designed and specified contracts, ex-post reinterpretation and reneging on commitments, and insufficient institutional capacity to administer the contracts (Harris, 2003). For example, in sub Saharan Africa 70 per cent of lease contracts in water and sanitation are cancelled (Dagdeviren and Robertson 2011). In Latin America, 76 per cent of all contracts in the water and sanitation sector were disputed and renegotiated after contracts were signed (Guasch and Straub 2009). A similar tale is also presented by Hall and Lobina (2006, 2008). The potential for renegotiation favouring the private partner is increased because the financial cost to the government of cancellation is significant – both in the form of compensation to the company and the transaction costs including the legal and administration fees should they choose to take this route (Nickson and Vargas 2002). The capacity of governments to take the route of cancelling contracts is further restricted by the loss of technical capability – in terms of labour for example – having surrendered the enterprise to the private sector. The government may therefore be reluctant to terminate contracts without the means by which to ensure the continuation of service provision (Kirkpatrick et al 2004).

The notion of 'contractual hazards' has been present throughout Williamson's articles with bolstered emphasis in his recent work where he suggested an argument for 'examining economic organization through the lens of contract' (2002a, 2002b, 2003a, 2003b). Nevertheless, the repercussions of contractual hazards are not worked through the approach he promotes on the choice between public versus private governance. The research papers presented in Shirley (2002) by transaction cost economists provide to some extent the context in which such hazards occur but these remain as empirical observations and have not been incorporated into a coherent theoretical framework for public vs. private governance. For most public services, including prison services, garbage and waste collection, health, education and water and sanitation services full private ownership or control is not an option. The state (and its agencies) is a primary party in contractual relations either as the funder (procurer) or the regulator of the service. Hence, private participation quite often transforms the contract between the politician and the public manager into another contract between the politician (or its representatives) and private manager (Dagdeviren and Robertson 2013). If contractual hazards are a source of inefficiency or higher transaction costs, it has to be demonstrated why such hazards are expected to be more prevalent under public ownership before private governance is advocated.

Furthermore, the portrayal of public sector in Williamson's description with low-incentives, high cost of employment and administration would be difficult to justify if the importance of incentives at various levels (rather than solely within individual entities) is recognized. Where TCT considers low incentives to be characteristic of public bureaucracy, and thus gives preference to private governance, it fails to consider the private counterpart to this argument: the necessary framework in which private incentives are established and administered. Within the context of natural monopoly conditions, contractual design and administration acquires particular significance in the establishing of incentive structures for the private party. It is typically the case however that the incentive structures are significantly less optimal. Sub-optimal design and administration permits opportunistic behaviour, firstly, in the form of ex-ante 'low-balling' in the bidding process, and, secondly, ex-post through the reinterpretation of poorly written and specified contracts. This is demonstrated, for instance, by the experience in Ghana where the contractual defects provided the private contractor for urban water supply with perverse incentives to default on its obligations rather than bearing the cost of compliance (Dagdeviren and Robertson 2013).

At another level, one could consider the incentives for investment in sectors where there are large scale sunk costs. In network industries maintenance of investment incentives under private governance is known to be difficult without considerable upward price flexibility, which may be constrained by regulators for the protection of consumers. In some sectors such as power lack of investment and the resulting capacity shortage leads to price spikes and increase the profitability of the generator (Dagdeviren 2009, 2012) with negative consequences for consumers, service quality and future supply. Hence, the firm level effects of low investment associated with such adverse incentives under private ownership are fundamentally different from their socio-economic outcomes.

Moreover, contracts for private participation in water and sanitation in developing countries provide multiple incentives for corruption on both a grand and petty scale. Kenny (2006) shows that the opportunities for corruption are widely being utilized by government officials with the collusion of private sector representatives. The cost of corrupt practices is estimated to be between five and ten per cent of the total value of projects. Hobbs (2005, p. 23) notes, based on interview evidence with private actors in infrastructure projects, that the private sector is well versed in the corruption process: 'All experienced bidders know that they must offer bribes in order not just to win the contract, but to successfully implement it'. Similar findings are present in Davis (2004). The implication of this level of entrenched corruption for potential disputes and renegotiations of contracts is the significant level of public opposition which it generates as demonstrated by the public opinion surveys in Latin America, indicating public distrust about privatization deals (Bonnet et al. 2011).

4. Political, social and distributional dimensions of ownership in public services

In addition to the point we made earlier regarding the lack of clarity about the position of TCT with respect to the major debates on distinguishing features of public sector activities (e.g. market failures in the form of monopolistic market structures, externalities, merit goods), the theory also fails to incorporate political interest (which is significant in the provision of essential services) in its analytical framework for the choice between private and public ownership. This weakness counteracts with the validity of the comparative efficiency analysis of TCT, as the remit of interest extends beyond the individuals and the discrete transaction under scrutiny. Political interest in public services follows from their ability to satisfy human needs, prevent or remedy human ailments (e.g. water, health), produce greater social benefit than private benefit and generate market failures in the absence of public intervention. Hence, assurances and commitments are often made through social policy, regarding accessibility and affordability of public services: abandonment or change threatens social unrest, deriving both from the denial of satisfaction of basic needs and potential negative externalities (Doyal and Gough 1991). With such characteristics, public services are within the remit of the state, their maintenance being of political interest. Governance of such transactions has additional conditioning factors including affordability, accessibility and control of externalities, such aspects being component to a social contract. Thus the inherent political interest in public services requires a mechanism for its incorporation into the theory of governance and ownership for public services.

Indeed as argued by Moe (1995, p. 147), TCT has a fixation in explaining organizations and governance structures which "constrain and coordinate their behaviours to the advantage of all" and are products of voluntary contractual agreements with no concern for winners and losers. However, as noted by Mäki (2004), alternative governance structures are not neutral with respect to the interests of all actors and their costs and benefits are not equally distributed. For example, a highly integrated production can be viewed as a move toward a higher level of optimization through lower transaction costs and mitigation of contractual hazards. This is different from and in a sense inferior to the mainstream theory where efficiency considerations are not only viewed at the level of firms but also for the society. In Williamson's analysis implications of firm level governance structures are not worked out for the society as a whole, e.g. integrated production could lower transaction costs for the [private] firm but it may also result in welfare losses for the society in the presence of market power.

If private participation results in reduced access to services such as education, health, water and sanitation the distributional consequences of the new governance are of as great importance as incentive intensity, administrative control and contractual hazards. The empirical evidence on shifts from public to private governance in the water sector indicate that such shifts create new conflicts between public and private interests, especially in relation to access, affordability and quality of service. Where the service has externalities or a life-sustaining character it prompts public interest in the nature of that provision. While Williamson (1999), in the advancement of the concept of probity, makes brief reference to transactions that have redistributional aspects and thus may be 'highly politicized', he fails to build these into the core theory (1999, p. 319).

The importance of the water supply at affordable prices is well demonstrated by empirical evidence. For example, Mehta and Canal (2004) show that in London a family of four with two income earners pay about 0.22 per cent of their income for water. In Accra (Ghana) a family of six with one income earner pays 22.4 per cent of its income to a neighbour with water connection. Komives et al (2005) suggest that 35 per cent of households in sub Saharan Africa are unable to pay full cost for water. Where these realities were ignored, the result in many cases has been the reversal of the privatization programmes. For instance, high tariff increases in Cochabamba generated a broad-based opposition, including community groups, local businesses, labour groups and farmers and forced the cancellation of the contract (Nickson and Vargas 2002; Lobina and Hall 2003). This was later echoed in the La Paz programme following a further 'uprising'. Similar political pressures led to renationalization of the entire water and sanitation systems in Argentina (Dagdeviren 2011; Casarin et al. 2007; Botton and Merlinksy 2006).

This, taken together with the well-known counterparty evidence from water multinationals, points to a conflict between social and private interests. For example, Vivendi stated that the need to make a reasonable profit limits investment to larger cities with sufficient per capita income (Kessler 2004). The management of SAUR drew similar conclusions.

> 'The scale of the need far out-reaches the financial and risk-taking capacities of the private sector. […] Water pays for water is no longer realistic in developing countries. […] Service users can't pay for the levels of investments required.' (CEO of SAUR, quoted in Lobina 2005, p. 77)

In 1999, the UK company Biwater, after extensive negotiation, withdrew from a water privatization project in Zimbabwe on the grounds that local consumers could not afford tariffs that were sufficient to generate an adequate commercial return for the company.

> '[F]rom a social point of view, these kinds of projects are viable but unfortunately from a private sector point of view they are not.' (Biwater country manager for Zimbabwe, quoted in Bayliss 2003, p. 514)

Furthermore, power relations are important regardless of the comparative efficiency of different organisational forms in that these relations may determine the selection of the mode of governance. This could be observed in the context of national-supranational relations in developing countries. What is consistent across privatization programmes is the significant role of donors and international financial agencies such as the World Bank and the IMF in the development of policy and subsequent selection of governance structures. This frequently occurs through debt relief programmes, with an increasing reach across all aspects of state activity – such that financial aid in general terms is conditional on the implementation of programmes in specific sectors (such as privatization). This provides a telling example of the ideological and economic power to which some states are subject in the decision making process regarding the governance of services.

Although Williamson accepts the relevance of power for organizational structures, its significance is de-emphasized in the evolution of institutional forms. This is justified on grounds of lack of conceptual clarity about 'power' and unsustainability of its influence on organizational forms without efficiency (Williamson 1995). Nonetheless, the prospects of change in power relations and non-permanence of power structures are not sufficient reasons for disregarding their importance in the formation of governance. The possibility that they can influence the choice, say, between public or private provision of services for a discrete period of time until the existing power structures change is significant for it would explain the outcomes associated with such changes. Similar criticisms on Williamson's stance on the role of power, governance and individual choice can be found in Ankarloo and Palermo (2004) who characterized this view as 'a fairy tale' of voluntary exchange, not validated by historical evidence, reflecting imposition of power and resistance against its acceptance; in Mäki (2004), who noted that in TCT power and authority are seen as a vehicle to restrain opportunism but abuse of power for self-interest is disregarded; and in Dossi (1995) who argued that power and authority are different from exchange but they are essential features of organizations and do influence choices and outcomes.

Conclusions

Oliver Williamson's work includes an application of transaction costs theory to the choice between public and private governance (including issues of ownership and management). This paper aimed to provide a critical assessment of his central propositions on this issue with reference to public services. In particular, we focused on his recommendation that public governance should be considered as an organization of last resort because of low incentives associated with it and be utilized for transactions where probity and highly protective employment contracts are necessary.

Our assessment has been based on three pillars. The first contained a critique of his views on the basis of the internal consistency of his theory. This is where we argue that Williamson's approach to public governance is underdeveloped. Despite his work on various aspects of market failures and his recognition of the importance of distributional issues, his publications on public vs private governance do not incorporate these into analysis. Instead, they are limited to sovereign administration and not suitable for application to a host of other public services. Its application results in ex-post justification of any governance form and hence its potential is limited as an instrument of prediction and decision making.

The second pillar of our discussion involved an assessment of the empirical validity of the theory in the context of a particular public service, namely water and sanitation, which, according to TCT, could be better governed under private management since there is no distinct role for probity and highly protective employment contracts in the sector. However, it is argued that even a cursory reference to the historical and contemporary ownership patterns in the sector would suffice to show the invalidity of Williamson's approach. The empirical evidence contained in the literature on the performance of public versus private water utilities does not support his views either. Neither is there evidence that transaction costs are systematically higher or incentives are systematically lower under public governance.

The third pillar of our paper looks into the missing elements in the TCT framework on public versus private governance as presented by Williamson. Here, we argue that TCT ignores the political interest in the provision of public services such as water, sanitation, health and education. Choice of governance for such services is not only an economic decision but a political one, potentially influenced by existing power structures. Similarly, the outcomes of such choices are likely to be non-neutral, as a result of their impact on access and affordability, with distributional and social consequences. The comparative efficiency analysis of TCT is shown therefore to be insufficient in the context of public services.

Endnote:

[1]Transactions that involve greater level of non-marketable, transaction specific investments (e.g. training or physical investments)

Bibliography

Alcazar, L., Abdala, M.A. and Shirley, M. 2002. The Buenos Aires water concession. *Thirsting for Efficiency*, M.M. Shirley (ed.), World Bank, Washington, 65-102

Alchian, A. A. and Demsetz, H. 1972. Production, information costs, and economic organization, *The American Economic Review,* vol. 62, no. 5, 777-795

Alchian, A. A. and Demsetz, H. 1973. The property right paradigm, *The Journal of Economic History,* vol. 33, no. 1, 16-27

Ankarloo, D. and Palermo, G. 2004. Anti-Williamson: a marxian critique of new institutional economics, *Cambridge Journal of Economics*, vol. 28, no. 3, 413–429

Bakker, K., Kooy, M., Shofiani, N. E. and Martijn, E. J. 2008. Governance failure: rethinking the institutional dimensions of urban water supply to poor households, *World Development,* vol. 36, no.10, 1891-1915

Bauer, C. J. 1997. Bringing water markets down to earth: The political economy of water rights in Chile, 1976-95, *World Development,* vol. 25, no 5, 639-656

Bayliss, K. 2003. Utility privatization in Sub-Saharan Africa: a case study of water, *Journal of Modern African Studies*, vol. 41, no. 4, 507–531

Bell, G. and Fageda, H. 2008. Reforming the local public sector: economics and politics in the privatisation of water and solid waste, *Journal of Economic Policy Reform,* vol. 11, no.1, 45-65

Bonnet, C., Dubois, P., Martimort, D. and Straub, S. 2012. Empirical evidence on satisfaction with privatization in Latin America, *The World Bank Economic Review,* vol. 26, no.1, 1-33

Botton, S. and Merlinsky, G. 2006. Urban water conflicts in Buenos Aires: Argentina, *Urban Water Conflicts: An Analysis of the Origins and Nature of Water-Related Unrest and Conflict in the Urban Context,* UNESCO: Paris

Buchanan, James M. 1978. Markets, states, and the extent of morals, *The American Economic Review,* vol. 68, no.2, 364-368

Buchanan, J. M. 1983. Rent seeking, non-compensated transfers, and laws of succession, *Journal of Law and Economics,* vol. 26, no.1, 71-85

Carter, R. and Hodgson, G. M. 2006. The impact of empirical tests of transaction cost economics on the debate on the nature of the firm, *Strategic Management Journal,* vol. 27, no.5, 461–476

Casarin A. A., Delfino J. A. and Delfino M. E. 2007. Failures in water reform: lessons from the Buenos Aires's concession, *Utilities Policy,* vol. 15, no. 4, 234–247.

Chang, H-J. 2002. Breaking the mould: an institutionalist political economy alternative to the neo-liberal theory of the market and the state, *Cambridge Journal of Economics*, vol. 26, no. 5, 539-559

Coase R. H. 1937. The nature of the firm, *Economica,* vol. 4, no.16, 386-405

Cutler, D. and Miller, G. 2005. *Water, Water Everywhere: Municipal Finance and Water Supply in America Cities,* Chicago, University of Chicago Press

Dagdeviren, H. 2008. Waiting for miracles: Commercialization of urban water services in Zambia. *Development and Change,* vol.39, no.1, 101-121

Dagdeviren, H. 2009. Limits to competition and regulation in privatized electricity markets, *Annals of Public and Co-operative Economics,* vol. 80, no. 4, 641-664

Dagdeviren, H. 2011. Political economy of contractual disputes in private water and sanitation: lessons from Argentina, *Annals of Public and Cooperative Economics,* vol. 82, no.1, 25-44

Dagdeviren, H. 2012. Crisis, sustainability of electricity prices and state interventions in Argentina, *Industrial and Corporate Change*, vol. 21, no.2, 403-427

Dagdeviren, H. and Robertson S.A. 2013. A critical assessment of incomplete contracts theory for private participation in public services: The case of water sector in Ghana, *Cambridge Journal of Economics*, vol. 37, no. 5, 1057-1075

Dagdeviren, H. and Robertson, S. A. 2011. Access to water in the slums of Sub-Saharan Africa, *Development Policy Review*, vol. 29, no. 4, 485-505

Dore, M. H. I; Kushner, J and Zumer, K. 2004. Privatization of water in the UK and France—What can we learn? *Utilities Policy* vol. 12, no.1, 41–50

David, R. J. and Han, S-K. 2004. A systematic assessment of the empirical support for transaction cost economics, *Strategic Management Journal*, vol. 25, no.1, 39–58

Davis, J. 2004. Corruption in public service delivery: experience from South Asia’s water and sanitation sector, *World Development*, vol. 32, no.1, 53–71

Dossi, G. 1995. Hierarchies, markets and power: some foundational issues on the nature of contemporary economic organizations, *Industrial and Corporate Change*, vol. 4, no.1, 1-19

Doyal, L. and Gough, I. 1991. *A Theory of Human Need.* London, Macmillan

Estache, A., Perelman, S. and Trujillo, L. 2005. Infrastructure performance and reform in developing and transition economies: evidence from a survey of productivity measures, World Bank Policy Research Working Paper 3514, Washington D C, World Bank

Galiani, S., Gertler, P. and Schargrodsky, E. 2005. Water for life: the impact of the privatization of water services on child mortality, *Journal of Political Economy*, vol. 113, no.1, 83-120

Galiani, S, Gonzalez-Rozada, M and Schargrodsky, E. 2009. Water Expansions in Shantytowns: Health and Savings, *Economica*, vol. 76, no. 304, 607-622

Guasch J. L. and Straub S. 2009. Corruption and concession renegotiations: evidence from the water and transport sectors in Latin America, *Utilities Policy*, vol. 17, no.2, 185–190.

Guasch, J. L. and Straub, S. 2006. Renegotiation of infrastructure concessions: an overview, *Annals of Public and Cooperative Economics*, vol. 77, no.4, 479-493

Furubotn, E. G. and Pejovich, S. 1972. Property rights and economic theory: a survey of recent literature, *Journal of Economic Literature*, vol. 10, no.4, 1137-1162.

Haggarty, L., Brook, P. and Zuluaga, A. M. 2002. Water service contracts in Mexico City, Mexico” *Thirsting for Efficiency*, M.M. Shirley (ed.), World Bank, Washington, 139-187

Hall, D. 2003. Public Services Work, Public Services International Research Unit (PSIRU), Working Paper, Greenwich University: PSIRU

Hall, D. and Lobina, E. 2008. Water privatisation, Public Services International Research Unit (PSIRU), Working Paper, Greenwich University: PSIRU

Hobbs, N. 2005. Corruption in World Bank Financed Projects: Why Bribery is a Tolerated Anathema, LSE Development Studies Institute Working Paper Series Number 05-65

Hodgson, G. 2004. Opportunism is not the only reason why firms exists, *Industrial and Corporate Change*, vol 13, no. 2, 401-418

Juuti, P. and Katko, T. 2005. *Water, Time and European Cities,* Retrieved from http://www.watertime.net/Docs/WP3/WTEC.pdf

Kenny, C. 2006. Measuring and reducing the impact of corruption in infrastructure, World Bank Policy Research Working Paper 4099, Washington D C: World Bank

Kirkpatrick, C. and Parker, D. 2005. Domestic regulation and the WTO: the case of water services in developing countries, *World Economy*, vol. 28, no. 10, 1491-1508

Kirkpatrick, C., Parker, D. and Zhang, Y-F. 2006. An empirical analysis of state and private-sector provision of water services in Africa, *The World Bank Economic Review,* vol. 20, no.1, 143–163

Komives, K., Foster, V., Halpern, J. and Wodon, Q. 2005. *Water, Electricity, and the Poor: Who Benefits from, Utility Subsidies?* Washington D. C, World Bank

Kremer, M; Leino, J; Miguel, E and Zwane, A. P. 2011 Spring cleaning: rural water impacts, valuation, and property rights institutions, *The Quarterly Journal of Economics*, vol. 126, no. 1, 145-205

Lewis, C. W, 2006. In pursuit of public interest, *Public Administration Review*, vol. 66, no.5, 694-701.

Lobina, E. and Hall, D. 2003. Problems with private water concessions: a review of experiences in Latin America and other regions, Inter-American Development Bank Working Paper, US: IADB

Lobina, E. and Hall, D. 2007. Water privatisation and restructuring in Latin America, Public Services International Research Unit (PSIRU), Working Paper, Greenwich University: PSIRU

Mäki, U. 2004. Theoretical isolation and explanatory progress: transaction cost economics and the dynamics of dispute, *Cambridge Journal of Economics*, vol. 28, no.3, 319–346

Masten, S. E. 2011. Public utility ownership in the 19th-century America: the 'aberrant' case of water, *Journal of Law, Economics and Organization*, vol. 27, no. 3, 604-654.

McMaster, R. and White, M. J. 2013. An investigation of Oliver Williamson's analysis of the division of labour. *Cambridge Journal of Economics*, forthcoming, doi:10.1093/cje/bet030

Mehta, L. and Canal, O. M. 2004. Financing water for all: behind the border policy convergence in water management', Institute of Development Studies (IDS) Working Paper, No 233

Menard, C. and Saussier, S. 2002. Contractual choice and performance, *The Economics of Contracts: Theory and Applications*, E. Brousseau and J-M Glachant (eds), Cambridge, Cambridge University Press.

Millward R. 1988. Measured sources of inefficiency in the performance of private and public enterprises in LDCs. Privatisation in Less Developed Countries, P. Cook, C. Kirkpatrick (eds). London, Harvester Wheatsheaf

Millward, R. 2011. Public enterprise in the modern Western World: a historical analysis. *Annals of Public and Cooperative Economics*, vol. 82, no. 4, 375-398

Minogue, M. and Cariño L. V. 2006. *Regulatory Governance in Developing Countries*, Cheltenham, Edward Elgar

Moe, T. 1995. The politics of structural choice: toward a theory of public bureaucracy. *Organisation Theory*, O. Williamson (ed), Oxford, Oxford University Press

Mueller, D. C. 1976. Public Choice: A Survey, *Journal of Economic Literature*, vol. 14, no.2, 395-433

Needham, C. E. 2006. Customer care and the public service ethos, Public Administration, vol. 84, no. 4, 845-860

Nickson, A. and Vargas, C. 2002. The limitations of water regulation: the failure of the Cochabamba concession in Bolivia, *Bulletin of Latin American Research*, vol. 21, no.1, 128-149

Niskanen, W. A. 1968. The peculiar economics of bureaucracy, *The American Economic Review*, vol. 58, no.2, 293-305

Niskanen, W. A. 1975. Bureaucrats and politicians, *Journal of Law and Economics*, vol. 18, no. 3, 617-643

Noll, R. 2002. The economics of urban water systems, *Thirsting for Efficiency*, M.M. Shirley (ed.), World Bank, Washington, 43-63

Palermo, G. 2007. The ontology of economic power in capitalism: mainstream economics and Marx, *Cambridge Journal of Economics*, vo. 31, no, 4, 539-561

Parker, D. and Saal, D S. 2006. Assessing the performance of water operations in the English and Welsh water industry, *Performance Measurement and Regulation of Network Industries*, T. Coelli and D. Lawrence (eds), Cheltenham: Edward Elgar

Peltzman, S. 1989. The economic theory of regulation after a decade of deregulation, *Brookings Papers on Economic Activity. Microeconomics*, 1989, 1-59.

Perard, E. 2009. Water Supply: Public or Private? *Policy and Society,* vol. 27, no. 3, 193-219

Posner, R. A. 1974. Theories of economic regulation, *Bell Journal of Economics and Management Science*, vol. 5, no. 2, 335-358

Rayner, J; Williams, H. M; Lawton, A and Allinson, C. 2010. Public service ethos: developing a generic measure, *Journal of Public Administration Research and Theory*, vol. 21, 27-51

Saygili S, Taymaz E. 2001. Privatisation, ownership and technical efficiency: a study of the Turkish cement industry, *Annals of Public and Cooperative Economics*, vol 72, no. 4, 581–605.

Shaoul, J. 1997. The power of accounting: reflecting on water privatization, *Accounting, Auditing and Accountability Journal,* vol. 10, no. 3, 382-405

Shirley, M.M. (ed.) 2002. *Thirsting for Efficiency*, Washington D. C, World Bank

Shirley, M. M. and Menard, C. 2002. Cities awash: A synthesis of the country cases, *Thirsting for Efficiency,* M.M. Shirley (ed.), Washington D. C, World Bank

Shirley, M. M., Xu, L.C. and Zuluaga, A. M. 2002. Reforming urban water supply: the case of Chile, *Thirsting for Efficiency*, M.M. Shirley (ed.), Washington D. C, World Bank

Spar, D. and Bebenek, K. 2009. To the Tap: Public versus Private Water Provision at the Turn of the Twentieth Century, *The Business History Review*, vol. 83, no. 4, 675-702

Tullock, G. 1959. Problems of majority voting, *The Journal of Political Economy*, vol. 67, no. 6, 571-579

Tullock, G. 1961. Utility, strategy, and social decision rules: comment, *The Quarterly Journal of Economics*, vol. 75, no. 3, 493-496

Tuohy, C. H and Glied, S. 2011. The political economy of health care, *Oxford Handbook of Health Economics*, S. Glied and P. C. Smith (eds), Oxford University Press

WHO (2014) Facts and figures on water quality and health, World Health Organisation,

Williamson, O. E. 2009. Transaction Cost Economics: The Natural Progressio, Retrieved from http://www.nobelprize.org/nobel_prizes/economics/laureates/2009/williamson-lecture-slides.pdf

Williamson, O. E. 2005. Why law, economics, and organization? *Annual Review of Law and Social Science,* vol. 1, 369-396.

Williamson, O. E. 2003a. Contract and economic organisation, *The Economics of Contracts,* E. Brousseau, J-M Glachant (eds), Cambridge, Cambridge University Press

Williamson, O. E. 2003b. Examining economic organisation through the lens of contract, *Industrial and Corporate Change*, vol. 12, no. 4, 917-942

Williamson, O. E. 2002a. The theory of the firm as governance structure: from choice to contract, *Journal of Economic Perspectives*, vol. 16, 171–195.

Williamson, O. E. 2002b. The lens of contract: private ordering, *American Economic Review*, vol. 92, no.3, 438-43

Williamson, O. E. 2000. The new institutional economics: taking stock, looking ahead, *Journal of Economic Literature*, vol. 38, no. 3, 595-613

Williamson, O. E. 1999. Public and private bureaucracies: A transaction cost economics perspective, *Journal of Law, Economics and Organisation,* vol. 15, no.1, 306-342

Williamson, O. E. 1998a. The institutions of governance, *The American Economic Review*, vol. 88, no.2, 75-79

Williamson, O. E. 1998b. Transaction cost economics: how it works; where it is headed, *De Economist*, vol. 146, no. 1, 23-58

Williamson, O. E. 1997. Transaction cost economics and public administration, *Public Priority Setting: Rules and Costs*, P.B. Boorsma; K. Aarts and A. E. Steenge (eds), Holland, Kluwer Academic Publishers

Williamson, O. E. 1995. Hierarchies, markets and power in the economy: an economic perspective, *Industrial and Corporate Change*, vol. 4, no. 1, 21-49

Williamson, O. E. 1993. Opportunism and its critics, *Managerial and Decision Making Economics*, vol. 14, 97-107

Williamson, O. E. 1985. *Economic Institutions of Capitalism*, New York: Free Press

Williamson, O. E. 1981. The economics of organisation: the transaction cost approach, *American Journal of Sociology,* vol. 87, no. 3, 548-577

Williamson, O. E. 1979. Transaction-cost economics: the governance of contractual relations, *Journal of Law and Economics,* vol. 22, no. 2, 233-261

Williamson, Oliver E. (1976), Franchise bidding for natural monopolies - in general and with respect to CATV, *The Bell Journal of Economics*, vol. 7, no. 1, 73-104

Williamson, Oliver E. (1975), *Markets and Hierarchies: Analysis and Anti-Trust Implications: A Study in the Economics of Internal Organization*, New York: Free Press.

Williamson, O. E. 1971. The vertical integration of production: market failure considerations, *The American Economic Review,* vol. 61, no. 2, 112-123

Williamson, O. E. 1970. Administrative decision making and pricing: externality and compensation analysis applied, in *The Analysis of Public Output*, J. Margolis (ed.), NBER, 115 – 138

Williamson, O. E. 1967. Externalities, insurance and disability analysis, *Economica,* vol. 34, no.135, 235-253

Xun, W and Malaluan, N. A. 2008. A Tale of Two Concessionaires: A Natural Experiment of Water Privatisation in Metro Manila, *Urban Studies*, vol. 45, no. 1, 207-229

Villalonga B. 2000. Privatisation and efficiency: differentiating ownership effects from political, organizational and dynamic effects. *Journal of Economic Behaviour and Organizations*, vol. 42, no. 1, 43–74.